

25: How to scale up and down



Scenario Questions:

1. You are planning a road trip and want to estimate how much time it will take. You know that for every 60 miles you drive, it takes you 1 hour. How long will it take you to drive 300 miles?

2. You are hosting a party, you know that, on average, each guest consumes 2 snacks and 1 drink. If you are expecting 20 guests, how many snacks and drinks should you buy?

3. Your car gets about 25 miles per gallon (mpg) of gas. You are planning a road trip that is 500 miles long. How many gallons of gas will you need for the trip?

4. You are buying 5 tickets for a concert, you know your friend bought 3 tickets for £180. If the tickets are the same price, how much should you expect to pay?

5. You are making a recipe for a cake that requires 3 cups of flour for every 1 cup of sugar. If you only have 2 cups of sugar, how much flour should you use?

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Scenario Questions:

6. You are planning a home renovation project and need to estimate the number of tiles needed. Each tile covers an area of 2 square feet. If your room is 200 square feet, how many tiles should you buy?

7. You are shopping for a bulk order of pens for your office. If 50 pens cost £20, how much would 100 pens cost?

8. You are organising a charity event. A survey suggests that, on average, each person donates £5. If you are expecting 200 people, how much money should you expect to collect?

9. You are comparing two smartphones. The battery life of one is 10 hours, the other is 15 hours. How many more times would you have to charge the 10 hour during a 60 hour period?

10. You are a freelance graphic designer and charge £50 per hour for your services. If a project typically takes you 10 hours to complete, how much would you charge?

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Scenario Questions: **Answers**

1. You are planning a road trip and want to estimate how much time it will take to drive to your destination. You know that for every 60 miles you drive, it takes you 1 hour. How long will it take you to drive 300 miles?

1. It will take you 5 hours.

2. You are hosting a party and need to buy snacks and drinks for your guests. You know that, on average, each guest consumes 2 snacks and 1 drink. If you are expecting 20 guests, how many snacks and drinks should you buy?

2. You should buy 40 snacks and 20 drinks.

3. Your car gets about 25 miles per gallon (mpg) of gas. You are planning a road trip that is 500 miles long. How many gallons of gas will you need for the trip?

3. You will need 20 gallons of gas.

4. You are buying 5 tickets for a concert, you know your friend bought 3 tickets for £180. If the tickets are the same price, how much should you expect to pay?

4. By buying 5 tickets you would pay £300 (£60/ticket).

5. You are making a recipe for a cake that requires 3 cups of flour for every 1 cup of sugar. If you only have 2 cups of sugar, how much flour should you use?

5. You should use 6 cups of flour.

6. You are planning a home renovation project and need to estimate the number of tiles you will need. Each tile covers an area of 2 square feet. If your room is 200 square feet, how many tiles should you buy?

6. You should buy 100 tiles.

7. You are shopping for a bulk order of pens for your office. If 50 pens cost £20, how much would 100 pens cost?

7. 100 pens would cost £40.

8. You are organizing a charity event and need to set up a system for collecting donations. A survey suggests that, on average, each person donates £5. If you are expecting 200 people, how much money should you expect to collect?

8. You should expect to collect £1,000

9. You are purchasing a new smartphone and comparing two models. The battery life of one model is 10 hours, while the other model lasts for 15 hours. How many more times would you have to charge the 10 hour phone than the 15 hour during a 60 hour period?

9. The 10 hour phone would need to be charged 2 more times.

10. You are a freelance graphic designer and charge £50 per hour for your services. If a project typically takes you 10 hours to complete, how much would you charge?

10. You would charge £500